

**Climatological Data for May, 1910.**  
**DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.**

BERNARD BUNNEMEYER, District Editor.

**GENERAL SUMMARY.**

There was quite a conspicuous difference in the climatological conditions between the western and the eastern portions of the district. In the former, embracing the entire Rio Grande and Rio Pecos valleys, the temperature was excessive and the precipitation decidedly deficient; in the latter, covering the Texas watersheds from the Nueces to the Sabine, just the opposite conditions prevailed. Deficiencies in precipitation occurred, however, over portions of several of the Texas watersheds, especially that of the Colorado. Most of the precipitation occurred from the 12th to the 23d, and during this period the droughty conditions in Texas were almost entirely relieved. In fact in some sections of this State agricultural operations were retarded by too much moisture in the ground.

The greatest monthly precipitation in Colorado was 0.95 inch at Platoro; in New Mexico, 1.54 inch at Gallinas Planting Station; and in Texas, 12.40 inches at Cuero. There was practically no precipitation at 16 stations in New Mexico and at 2 stations in Texas, while at 14 other stations in New Mexico and at 1 station in Colorado the monthly amounts did not exceed 0.10 inch.

Excessive precipitation of 2.50 inches or more in 24 consecutive hours was reported from 31 stations in Texas, the greatest being 7.08 inches at San Juanito on the 18th, and the next greatest, 6.20 inches at Pierce on the 19th. Half of these heavy rains occurred in the coastal plains and lower valleys, and the other half in the interior, mostly in the Brazos, middle Trinity, and upper Neches valleys.

Light to moderate snow fell on several days in the northern mountain districts, the heaviest monthly amount being 8 inches in Colorado at Cumbres, and 8.2 inches in New Mexico at Harveys Upper Ranch. Thunderstorms were of frequent occurrence in the eastern portion of the district, especially from the 18th to the 23d, and the accompanying wind and hail caused more or less damage in numerous localities, but the damages were slight compared with the value of the precipitation. The highest wind velocity recorded at regular Weather Bureau stations was 50 miles from the southwest at Fort Worth on the 21st, and from the west at Galveston on the 23d. The number of days with 0.01 inch or more of precipitation averaged 4 in Colorado, 2 in New Mexico, and 6 in Texas. The sunshine was ample, although in portions of the district it averaged below the normal.

**TEMPERATURE.**

The mean temperature averaged  $3.4^{\circ}$  above the normal in Colorado, and  $1.3^{\circ}$  above in New Mexico, while in Texas it was  $0.9^{\circ}$  below normal. There were no unusual changes in temperature during the month, although several cool periods of short duration occurred. The average daily range was about  $10^{\circ}$  on the coast and increased to  $36^{\circ}$  in the remote interior. Damaging frosts occurred in the northwestern portion of the district on the 6th and 7th, and at the higher stations on the 17th and 23d. There were no frosts in the Texas portion of the district. The warmest weather occurred generally during the last 5 or 6 days of the month.

The extreme temperatures reported were: In Colorado,  $92^{\circ}$  at Saguache on the 30th and  $18^{\circ}$  at Wagon Wheel Gap on the 17th; in New Mexico,  $102^{\circ}$  at Socorro on the 29th and 30th, and  $21^{\circ}$  at Red River Canyon on the 6th; and in Texas,  $107^{\circ}$  at Zapata on the 22d and 25th, and  $39^{\circ}$  at Plainview on the 3d. The local monthly means ranged from  $47.6^{\circ}$  to  $55.0^{\circ}$  in Colorado, from  $47.5^{\circ}$  to  $72.3^{\circ}$  in New Mexico, and from  $64.5^{\circ}$  to  $83.7^{\circ}$  in Texas.

**PRECIPITATION.**

A decided deficiency in precipitation occurred throughout the watersheds of the Rio Grande and Rio Pecos. In the former, the deficiency averaged 0.45 inch over the upper reaches and 1.61 over the lower; in the latter the deficiency averaged 0.86 inch in New Mexico and 0.98 inch in Texas. A large number of stations in these watersheds had practically no precipitation. Amounts equaling or slightly exceeding 1 inch occurred only in some of the upper and lower portions of the Rio Grande Valley and in the extreme upper portion of the Rio Pecos.

The precipitation over the Texas watersheds exceeded the normal, except in the case of that of the Colorado which had a deficiency of 1.65 inch. The excess ranged from 0.03 inch in the Trinity watershed to 2.62 inches in the coastal plains. The following are the average monthly amounts in inches for the various watersheds: Nueces, 2.29; San Antonio, 4.72; Guadalupe, 4.50; Lavaca, 6.80; Colorado, 2.53; Brazos, 4.75; Trinity, 5.14; Neches, 6.44; Sabine, 5.00; and coastal plains, 5.50. Compared with the conditions of the previous month there was an increase of 1 to 3 inches, except in the Nueces and Colorado watersheds. The Nueces had a nominal decrease of 0.12 inch, while the Colorado averaged very nearly the same. Heavy amounts of over 8 inches occurred over a broad belt running parallel to the coast, and in the middle portions of the Brazos and of the Neches valleys.

**RIVER CONDITIONS.**

High water continued in the Rio Grande during the month. At the Leasburg Project the maximum discharge amounted to 10,000 second-feet, but no damage was done to the Reclamation Project, although at various points along the river the banks were eroded, and in some instances county bridges were damaged. At San Marcial the adobe walls of several buildings were softened by the high water. At El Paso the river began to recede slowly on the 7th and continued to fall until the close of the month, the total fall from the 7th to the 31st being only 3.1 feet. A rise of 3 feet occurred at Zapata and of 10 feet at Llano Grande, and at the close of the month the river at the latter place was about 5 feet above low water of March. There was an abundance of water for all purposes.

Although very little rain has fallen on the Rio Pecos watershed it was reported that the supply of water stored at the Carlsbad Project would be sufficient for many weeks. At the Hondo Project there was no water available for irrigation during the month.

The Texas rivers, as a rule, discharged a smaller volume of water than during the preceding month notwithstanding a heavier precipitation, but the volume discharged was much larger than during the corresponding month of last year. Sharp rises occurred in several rivers which were of great benefit to lumbermen and sawmills. Flood stages were exceeded in the Colorado at Columbus on the 23d, and in the Guadalupe at Victoria on the 24th, but no damage was caused.

**MISCELLANEOUS.**

*Ball lightning.*—This phenomenon is comparatively rare and so far as known has never been satisfactorily accounted for. The luminous balls move rather slowly and usually disappear with an explosion. Mr. G. A. Eisenlohr, cooperative observer at Dallas, Tex., has furnished the following report of an observation of this phenomenon:

About 3:30 a. m. of the 19th a very severe thunderstorm passed over this region; in fact, several thunderstorms; one in the east, one in the south, and one in the northwest. The one in the east was one of very brilliant display of lightning, blinding in its brilliancy, and the thunder following did not

manifest itself in the usual clap and rolling sound, but resembled more the detonations of cannons fired in rapid succession. During these storms I had the opportunity of seeing a luminous ball entering my south window and floating in the direction of the electric light, which was not glowing at the time. This lamp is suspended about 12 inches over an oak table. When the luminous ball reached the table it bounded and rebounded, diminishing in size until it vanished. I watched the electrical display for over an hour and at times it seemed as though the whole atmosphere was filled with light.

From newspaper accounts it appears that luminous balls of fire were observed also in other parts of the city.

*Rio Grande Project.*—From the Reclamation Record for June, 1910, it is gleaned that the work on the survey for the high line canal, extending from the Leasburg canal in Mesilla Valley to the vicinity of El Paso, is to be suspended and that the force is to be employed north of San Marcial in a study of irrigation conditions on the Rio Grande. The Secretary of the Interior has directed that the work on the Engle Dam be so planned as to begin upon the foundations in July, 1911. This dam occupies a different status from that of the other approved projects, because the citizens of the Republic of Mexico are interested in it and the faith of this Government is pledged by treaty to begin and complete it as early as possible.

#### IRRIGATION IN TEXAS.

(Concluded from the April Review.)

*San Felipe Agricultural, Manufacturing and Irrigation Company, Del Rio.*—Aggregate acres served, 1,200; location, Val Verde County, near Del Rio.

*San Felipe Canal Company, San Felipe, Austin County.*

*San Jacinto Rice Company, Elena, Harris County.*

*San Juan Plantation Company, San Juan.*—Aggregate acres served, 700; capacity of canals, 300 more acres, of pumping plant, 1,000 more; acres that could be served by contemplated equipment, 5,000; location, Hidalgo County, near San Juan and Savage post-offices.

*San Jose Irrigation and Power Company, Knickerbocker.*—Aggregate acres served, about 1,500; location, Irion and Tom Green counties, near Knickerbocker post-office. The plant is a gravity system, but individual pumping plants are also used, taking water from Dove Creek below the company's diversion dam.

*Santa Maria Irrigation Company, Santa Maria, Cameron County.*

*Security Rice and Irrigation Company, Bay City, Matagorda County.*

*Southern Irrigation Company, Lane City.*—Aggregate acres served, 16,000; location, Wharton County, near Arnim post-office.

*Southwestern Rice Company, Houston, Harris County.*

*Spindletop Canal and Irrigation Company, Beaumont, Jefferson County.*

*Tankersley Ditch and Irrigation Company, Knickerbocker, Tom Green County.*

*Texas Irrigation Company, successors to Tres Palacios Rice Irrigation Company, Dallas, Tex.*—Location, Matagorda County near Buckeye post-office; aggregate acres served, 9,000; additional acreage that could be served by contemplated equipment, 4,000.

*Texas Land and Irrigation Company, Beaumont.*—Aggregate acres served, 500; additional acreage that could be served by contemplated equipment, 1,500; location, Jefferson County, near Beaumont.

*Tojah Valley Irrigation Company, Bogata, Red River County.*  
*Val Verde Irrigation Company, Del Rio, Val Verde County.*  
*Wichita Land and Irrigation Company, Anson, Jones County.*  
*Yoakum Land and Irrigation Company, Fordyce, Hidalgo County.*

*Zimmerman Canal, Zimmerman.*—Location, Pecos County, near Zimmerman post-office. The plant is being enlarged and the aggregate number of acres to be served will be 30,000.

#### EXPERIMENTAL DETERMINATION OF THE RELATION OF FORESTS TO STREAM FLOW.

By F. H. BRANDENBURG, Section Director, Denver, Colo.

To secure definite information concerning the much discussed question of the relation of forests to stream flow is the purpose of the experiment which has just been started under the general direction of the United States Forest Service. Three bureaus of the Government will cooperate in conducting this experiment in order to cover thoroughly every phase of the problem, so that definite knowledge may be secured regarding a subject which has recently excited so much controversy.

The United States Geological Survey, the Weather Bureau, and the Forest Service will have a share in the establishment and conducting of the experiment which it is expected will extend over a long term of years.

The prime object of the experiment is to determine as accurately as possible the difference in behavior of two streams, one flowing from a watershed which is covered with forest growth, and the other from a watershed which has been denuded of its forest cover.

The locality selected for the experiment is near Wagon Wheel Gap, in Mineral County, Colo., and the streams to be measured are small tributaries of the Rio Grande. Each of the two streams drains an area of about 200 acres. At a point on each stream, just above their junction, dams will be constructed which will make it possible to measure accurately the flow of water over these dams, as well as the accumulation of silt behind the dams.

Representatives of the three bureaus are now on the ground conducting their respective shares of the work. The Geological Survey will make a careful examination of the geology of the area included in the experiment in order to determine to what extent, if any, there may be a subsurface flow of water. The Weather Bureau will conduct all measurements of precipitation, both rain and snow fall, evaporation, and the run-off. Standard instruments will be used for measuring all the different factors which play a part in the experiment.

Log cabins to serve as headquarters for the officials who will have charge of the experiment are being constructed and will be completed within a short time. The officials in charge will live at these headquarters all the year round so that the experiment will have constant attention, and no point which may have any influence upon the outcome will be overlooked.

Experiments along the same general lines have been conducted in certain European countries, but heretofore nothing has been attempted in this country on such an elaborate scale. It is confidently expected by every one concerned in the work that the results of this experiment will go a long way toward settling beyond dispute many points which have been discussed in the magazines and daily press during the past year.

TABLE 1.—Climatological data for May, 1910. District No. 8, Texas and Rio Grande Valley.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest Date.	Lowest Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days, 0.1 inch or more.	Number of partly cloudy days.	Number of cloudy days.				
<i>Colorado.</i>																			
Blanca.	Costilla.	8,403	1	50.4	.....	82 29†	20	17 44	0.32	.....	0.13	2.0	4	11	20	0	sw.	L. C. Audrain.	
Cumbres.	Conejos.	10,015	3	.....	.....	.....	.....	.....	0.78	.....	0.55	8.0	3	9	20	2	sw.	Ida M. Lively.	
Garnett.	Costilla.	7,576	17	51.5	+ 3.1	84 29†	22	17 46	0.46	- 0.29	0.21	0.0	4	13	13	5	w.	Chas. Speiser.	
Hermit.	Hinsdale.	9,843	.....	.....	.....	.....	.....	.....	0.30	.....	0.15	2.0	3	15	9	7	.....	Marion Mason.	
La Veta Pass.	Costilla.	9,000	.....	.....	.....	.....	.....	.....	0.40	.....	0.40	5.0	1	22	0	9	w.	Norvin R. Lively.	
Manassa.	Conejos.	7,700	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. B. Chapman.	
Platoro.	do.	9,675	2	.....	.....	.....	.....	.....	0.95	.....	0.26	7.0	9	15	10	6	w.	Walter R. Hook.	
Saguache.	Saguache.	7,740	18	55.0 <sup>d</sup>	.....	92 30	24 <sup>d</sup>	17 49 <sup>a</sup>	0.02	- 0.80	0.02	T.	1	13	7	11	w.	Eugene Williams.	
San Luis.	Costilla.	7,704	19	50.8	+ 1.1	85 30	23	6 46	0.86	- 0.34	0.40	T.	4	7	23	1	sw.	P. B. Albright.	
Wagon Wheel Gap.	Mineral.	8,434	11	47.6	+ 5.8	80 28†	18	17 51	.....	.....	.....	.....	15	2	14	14	sw.	Ellwood Bergey.	
<i>New Mexico.</i>																			
Agricultural College.	Dona Ana.	3,863	44	71.2	+ 0.9	99 28†	43	6 44	T.	- 0.25	T.	0.0	0	17	14	0	.....	New Mexico Agri. College.	
Alamogordo (near).	Otero.	4,338	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Geo. C. Bernis.		
Alamogordo.	do.	4,320	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	El Paso & Southwest. R. R.		
Albuquerque.	Bernalillo.	5,200	34	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	University of New Mexico.		
Ancho.	Lincoln.	6,112	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	El Paso & Southwest. R. R.		
Artesia.	Eddy.	3,350	.....	69.4	.....	99 28	38	23 49	0.00	.....	0.00	0.0	0	14	1	16	se.	Will Benson.	
Aspen Grove Ranch.	Rio Arriba.	9,000	.....	.....	.....	.....	.....	.....	0.53	.....	0.25	0.9	3	5	24	2	.....	Junius D. Maupin.	
Bateman's Ranch.	do.	8,900	.....	.....	.....	.....	.....	.....	0.20	.....	0.20	T.	1	18	10	3	w.	John W. Bateman.	
Bluewater.	Valencia.	6,732	8	57.0	.....	95 30	25	6 55	0.52	.....	0.39	0.0	3	10	19	2	nw.	Bluewater Development Co. Do.	
Bluewater Reservoir.	do.	9,000	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	D. C. Savage.	
Boaz.	Chaves.	4,154	1	65.2	.....	96 10	32	23 49	0.28	.....	0.16	0.0	3	3	26	2	w.	El Paso & Southwest. R. R.	
Capitan.	Lincoln.	6,348	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	3	17	8	6	s.	U. S. Reclamation Service.	
Carlsbad.	Eddy.	3,120	15	72.3	+ 0.2	101 10	39	3 47	0.20	- 0.29	0.15	0.0	2	15	11	5	se.	A. H. Harvey.	
Carriozo.	Lincoln.	5,429	2	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	16	15	0	sw.	Frank C. Johnson.	
Chama.	Rio Arriba.	7,851	11	52.0	+ 1.8	86 30	22	6 48	0.32	- 1.03	0.32	3.0	1	27	3	1	sw.	El Paso & Southwest. R. R. Do.	
Cloudcroft.	Otero.	8,650	7	56.8	.....	78 16†	34	20 38	0.10	.....	0.10	1.0	1	19	9	3	w.	Teofilo Vilij.	
Corona.	Lincoln.	6,666	.....	.....	.....	.....	.....	.....	0.12	.....	0.08	0.0	2	20	6	5	se.	Erb & Westerman.	
Coyote.	do.	5,800	.....	.....	.....	.....	.....	.....	0.22	.....	0.1	1.0	1	11	2	18	w.	W. H. Birkhead.	
Cundiyo.	Santa Fe.	6,889	1	.....	.....	.....	.....	.....	0.56	.....	0.15	0.0	5	13	6	12	w.	Frank L. Paxton.	
Demonstration Farm.	San Miguel.	6,800	.....	.....	.....	.....	.....	.....	0.05	.....	0.05	0.0	1	22	5	4	.....	M. W. Waldron.	
Duran.	Torrance.	6,272	1	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	22	5	4	.....	Boyd Williams.	
Edison Mine.	Taos.	10,600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	El Paso & Southwest. R. R.	
Elida.	Roosevelt.	4,345	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John T. Blanton.	
Elk (near).	Chaves.	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Linus L. Shields.	
Escondido.	Otero.	4,014	.....	.....	.....	98 28†	.....	.....	.....	.....	.....	0.0	0	14	8	9	sw.	Gus Weiss.	
Espanola.	Rio Arriba.	5,500	12	64.8 <sup>a</sup>	.....	93 <sup>a</sup> 28	34 <sup>a</sup>	23 47 <sup>a</sup>	0.25	- 0.68	0.12	0.0	3	19	8	4	sw.	P. A. Turnbull.	
Estancia.	Torrance.	6,140	5	61.0	.....	88 31	33	9 52	0.04	.....	0.04	0.0	1	20	11	0	w.	Wm. P. Keil.	
Fort Stanton.	Lincoln.	6,231	32	60.4 <sup>c</sup>	+ 1.3	94 <sup>a</sup> 28	32 <sup>a</sup>	23 47 <sup>a</sup>	0.18	- 0.52	0.14	0.0	3	14	9	8	w.	Dr. Wm. Curtiss Bailey.	
Fort Sumner.	Guadalupe.	3,980	7	65.1	.....	96 30	36	5 45	T.	.....	T.	0.0	0	18	5	8	se.	H. G. Liston.	
Gallinas.	Lincoln.	6,635	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	0.0	1	12	6	13	c.	Richard Poli.	
Gallinas Planting Station.	San Miguel.	7,500	3	53.4 <sup>a</sup>	.....	85 <sup>a</sup> 28†	29 <sup>a</sup>	22 47	1.54	.....	0.70	T.	5	4	23	4	se.	El Paso & Southwest. R. R.	
Harvey's Upper Ranch.	do.	9,400	1	.....	.....	92 31	29	13 39	T.	- 0.48	T.	0.0	0	23	3	5	w.	Simon B. Warner.	
Hillaboro.	Sierra.	5,224	13	58.2	.....	92 31	29	13 39	T.	- 0.42	T.	0.0	0	19	6	6	nw.	Dr. Frank L. Givens.	
Hodges.	Taos.	8,484	.....	.....	.....	.....	.....	.....	0.42	.....	0.25	0.0	0	21	1	9	sw.	Jas. D. Bird.	
Hondo Reservoir.	Chaves.	3,904	1	66.5	.....	99 10	39	6 48	0.75	.....	0.42	0.0	2	17	10	4	se.	U. S. Reclamation Service.	
Hope.	Eddy.	9,500	3	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	15	3	13	w.	C. M. Bott.	
Hopewell.	Rio Arriba.	6,100	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	17	5	9	sw.	John T. Blanton.	
Jemez Springs.	Sandoval.	5,557	5	61.2	.....	91 28†	34	23 46	0.52	.....	0.52	0.0	1	14	14	3	w.	Linus L. Shields.	
Laguna.	Valencia.	5,840	5	62.7	.....	95 28†	32	6 46	0.50	.....	0.50	0.0	1	17	5	9	w.	P. A. Turnbull.	
Lagunita.	Guadalupe.	4,500	5	63.8	.....	95 28	34	6 51	0.03	.....	0.03	0.0	1	15	11	5	s.	Wm. P. Keil.	
Lake Valley.	Santa Fe.	5,413	.....	.....	.....	.....	.....	.....	0.15	.....	0.15	0.0	0	13	7	1	sw.	Dr. Wm. Curtiss Bailey.	
Las Vegas.	San Miguel.	6,384	23	57.6	+ 0.3	95 28	29	7 48	0.13	- 1.74	0.08	0.0	2	20	9	2	w.	H. G. Liston.	
Liston.	Chaves.	4,900	20	.....	.....	.....	.....	.....	0.84	.....	0.33	0.0	0	3	12	5	s.	Richard Poli.	
Los Lunas (near).	Valencia.	4,900	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	15	3	13	w.	El Paso & Southwest. R. R.	
Los Tanos.	Guadalupe.	4,919	.....	.....	.....	.....	.....	.....	.....	.....	.....	0.0	0	17	5	9	sw.	Wm. Pender.	
Magdalena.	Socorro.	6,557	5	61.2	.....	91 28†	34	23 46	0.52	.....	0.52	0.0	0	14	14	3	w.	Capt. Chas. Grapes.	
Malaga.	Eddy.	3,000	.....	.....	.....	.....	.....	.....	0.10	.....	0.10	0.0	1	7	22	2	sw.	W. M. Nelson.	
Mineral Hill.	San Miguel.	7,050	5	61.0	.....	90 28†	36	23 49	0.25	.....	0.14	0.0	2	18	13	0	sw.	El Paso & Southwest. R. R.	
Monterey.	Otero.	4,436	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0.0	0	21	1	9	sw.	John T. Blanton.	
Monument.	Eddy.	3,500	4	.....	.....	.....	.....	.....	0.10	.....	0.10	0.0	0	21	1	9	sw.	Linus L. Shields.	
Mountainair.	Torrance.	6,547	8	60.8	.....	92 29	36	23 49	0.25	.....	0.14	0.0	2	18	13	0	sw.	Gus Weiss.	
Newman.	Otero.	3,980	.....	.....	.....	100 29	36	23 49	T.	.....	T.	0.0	0	18	13	0	w.	P. A. Turnbull.	
Noria.	Dona Ana.	4,114	.....	.....	.....	100 10	32	3 54	0.05	.....	0.05	0.0	0	23	7	1	w.	Wm. P. Keil.	
Orange.	Otero.	67.0	.....	.....	.....	94 10	32	3 54	T.	.....	T.	0.0	0	20	3	8	ne.	Dr. Wm. Curtiss Bailey.	
Orogrande.	do.	4,171	.....	.....	.....	100 10	32	3 54	0.05	.....	0.05	0.0	0	10	15	8	sw.	Jas. Brownfield, Jr.	
Oscuro (near).	Lincoln.	5,016	1	.....	.....	99 28†	37	18 36	0.16	.....	0.11	0.0	3	12	13	6	s.	El Paso & Southwest. R. R.	
Otis.	Eddy.	3,100	1	.....	.....	92 28	26	23 48	0.21	.....	0.08	0.0	0	4	21	7	3	se.	Eugene F. Jones.
Otto.	Santa Fe.	6,200	1	.....	.....	94 10	38	23 48	0.13	.....	0.13	0.0	0	2	17	6	8	w.	A. M. Hove.
Pastura.	Guadalupe.	5,285	.....	.....	.....	98 30	42	20 50	0.06	.....	0.06	0.0	1	16	14	1	sw.	W. K. Davis.	
Picacho (near).	Lincoln.	8,650	2	47.5	.....	78 27	21	6 47	1.00	.....	0.80	T.	3	19	8	4	e.	El Paso & Southwest. R. R.	
Rio Grande Canyon.	Dona Ana.	4,030	12	71.2	+ 3.4	100 28†	43	6 47	T.	- 0.22	T.	0.0	0	16	6	9	sw.	Edwin B. Seward.	
Rio Grande Dam.</td																			

TABLE 1.—*Climatological data for May, 1910. District No. 8—Continued.*

Stations.	Counties.	Temperature, in degrees Fahrenheit.										Precipitation, in inches										Sky.	Prevailing wind direction.	Observers.
		Elevation, feet.	Length of record, yrs.	Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmeasured.	Number of rainy days, 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.						
<b>Texas.</b>																								
Abilene.	Taylor.	1,738	25	71.4	- 0.5	97	11	45	3	34	2,11	- 1.61	0.99	0.0	6	9	6	16	s.	U. S. Weather Bureau.				
Albany.	Shackelford.	1,429	16	68.4	- 3.2	96	26	43	3	44	3,55	- 0.20	1.84	0.0	4	17	3	11	se.	N. L. Bartholomew.				
Alvin.		49	11								10,80	+ 6.94	3,36	0.0	7	8	9	14	se.	F. A. Smith.				
Anahusci.	Chambers.	23	1								7.79		4.00	0.0	7				se.	R. H. Collins.				
Austin.	Travis.	593	24	73.6	- 2.1	91	31	56	23	28	2,94	- 1.51	0.90	0.0	7	11	16	4	e.	A. Deussen.				
Ballinger.	Runnels.	1,637	15	72.8	- 0.4	100	11	47	23	46	1,42	- 2.18	1.82	0.2	0	15	5	11	s.	E. M. Eubank.				
Barstow.	Ward.	2,573	3	72.8 <sup>a</sup>	100 <sup>b</sup>	17	46	53	T.		3,59		1.95	0.0	0	25	4	2	se.	W. H. Denis.				
Bay City.	Matagorda.	53													0	4	5	11	se.	E. C. Quereau.				
Beaumont.	Jefferson.	29	13	74.9		93	31	55	24	31	7,59	+ 4.58	2.61	0.0	7	13	0	18	se.	John Bender.				
Beeville.	Brazoria.	225	14	75.8	- 1.5	92	12 <sup>c</sup>	58	25	27	4,07	+ 0.89	1.30	0.0	7	8	11	12	e.	L. E. Dickey.				
Big Springs.	Howard.	2,396	12	73.2		105	11	45	3	49	0.69	- 2.59	0.45	0.0	5	17	8	6	s.	R. Reagan.				
Blanco.	Blanco.	1,350	14	72.4	+ 0.2	90	11	52	25	31	2,64	+ 0.05	1.09	0.0	6	17	11	3	s.	R. C. Crist.				
Boerne.	Kendall.	1,412	18	75.4	+ 1.7	96	27	56	31	38	1,91	- 2.06	1.50	0.0	5	12	12	7	s.	F. W. Schweppe.				
Booth.	Fort Bend.	81	9								7.37		2.50	0.0	9	14	0	17	ne.	T. R. Booth.				
Bowie.	Montague.	1,113	16	69.5	- 1.3	95	10	47	3	34	3,89	- 1.26	1.01	0.0	11	13	4	14	s.	Craig Anderson.				
Brazoria.	Brazoria.	25	21	75.0 <sup>a</sup>		92	12	52	25	38	3,77	+ 0.60	1.25	0.0	9	16	4	5	se.	Mrs. M. A. Stevens.				
Brazos.	Palo Pinto.	801	1								5.57		2.90	0.0	5	14	6	11	s.	Robt. E. Bovett.				
Brenham.	Washington.	350	21	73.9	- 1.2	91	11 <sup>c</sup>	58	97	32	5.03	+ 1.18	1.35	0.0	8	14	5	12	s.	Mrs. B. F. Sloan.				
Bridgeport.	Wise.	754	1								3.59		1.30	0.0	10	19	1	11	s.	Wm. M. Wilkinson.				
Brighton.	Nueces.	12	14	78.0	- 0.8	91	27	50	21	37	4,31	+ 0.47	1.31	0.0	6	17	4	10	se.	G. H. Ritter.				
Brownsville.	Cameron.	38	21	78.2	+ 0.3	91	8	58	24	33	1,41	- 0.75	1.06	0.0	5				s.	U. S. Weather Bureau.				
Brownwood.	Brown.	1,342	20	72.0	- 0.7	97	11	47	24	41	2,57	- 0.61	1.95	0.0	5	9	15	7	s.	Mrs. Pearl Smith.				
Cameron.	Milam.	2	24	74.4		94 <sup>a</sup>	2	55	8	32	5,29		2.81	0.0	6	24	8	1	s.	J. E. Watts.				
Claytonville.	Polk.	330	2								2,96		1.01	0.0	10	14	12	5	s.	M. S. Spitzer.				
Coleman.	Fisher.	2,100	6	71.0		97	11	40	24	51	2,18		1.09	0.0	1	7	12	12	s.	Wm. Lanius.				
College Station.	Coleman.	1,710	16	73.2 <sup>a</sup>		93 <sup>c</sup>	11	50	23	30	1,70	- 1.27	1.70	0.0	1	18 <sup>c</sup>	6	4	s.	J. H. Tucker.				
Colorado.	Brazos.	2,068	16	71.7	- 0.8	98	1	43	24	42	1,40	- 1.04	0.62	0.0	5				s.	Prof. G. S. Fraps.				
Columbia.	Colorado.	34	21	74.8	- 0.4	95	12	53	25	35	5,23	+ 2.28	2,50	0.0	5	18	9	4	s.	R. M. Webb.				
Comstock.	Valverde.	1,557	1								3.80		1.20	0.0	5	8	16	7	s.	R. B. Loggins.				
Corpus Christi.	Nueces.	20	23	75.6	- 0.9	88	31	61	7	21	4,05	+ 1.27	1.58	0.6	6	8	20	3	se.	Mrs. Sophie Bridge.				
Corsicana.	Navarro.	445	21	72.2	- 1.3	94	30	50	14 <sup>c</sup>	38	5,98	+ 1.17	1.71	0.0	9	21	1	9	se.	A. D. Brown.				
Crockett.	Houston.	350	6	73.6		97	30	53	14	40	11,25		4.17	0.0	6	16	9	6	s.	U. S. Weather Bureau.				
Cuero.	DeWitt.	177	21	75.8	- 1.5	95	30	50	25	29	12,40	+ 8.92	4,10	0.0	8	14	6	11	s.	E. L. Gibson.				
Dallas.	Dallas.	466	21	69.8	- 2.8	97	10	50	87	95	4,59	+ 0.04	1,06	0.0	8	12	3	16	s.	A. M. Rencher.				
Danevang.	Wharton.	145	14	75.0	- 1.5	93	18 <sup>c</sup>	54	11	35	8.00	+ 4.85	3,25	0.0	4	21	7	3	s.	H. R. Frobeso.				
Decatur.	Wise.	1,047	4								3.54		1,10	0.0	6	9	14	8	s.	G. A. Eisenlohr.				
Del Rio.	Valverde.	652	4	77.1	+ 0.2	97	25	49	24	41	4,55	- 2.41	0.23	0.0	5	14	14	3	s.	H. P. Hermansen.				
Devine.	Medina.	653	77.4			97	97	55	23	35	3,08		2,20	0.0	4	20	6	5	s.	Fort Worth & Denver Ry.				
Diaville.	Cherokee.	575	12	71.8	- 0.8	91	30	50	8	30	6,17		3,40	0.0	6	9	15	7	s.	U. S. Weather Bureau.				
Diley.	Frio.	569									1.00		0.83	0.0	2				s.	John W. Miller.				
Dublin.	Erath.	1,466	15	69.7	- 1.3	93	9	48	15	35	1,84	- 2.90	0.54	0.0	4	11	11	9	s.	Jno. O. Shafer.				
Duval.	Travis.	820	21	72.9	- 2.3	93	31	54	23	30	2,44	- 1.27	0.65	0.0	7	14	10	7	s.	J. C. Edgar.				
Eagle Pass.	Maverick.	800	21	79.5	+ 0.3	100	11	53	24	45	4,45	- 2.68	0.25	0.0	2	26	3	3	s.	Jos. Metcalfe.				
Edna.	Jackson.	71									8.11		2,50	0.0	7				s.	E. L. Faires.				
El Paso.	El Paso.	3,762	31	73.8	+ 1.7	98	28	50	23	32	T.	- 0.35	1.15	0.0	0	21	7	3	w.	U. S. Weather Bureau.				
Encinal.	La Salle.	558	2	79.8		100	27	55	24	37	2,23		1.15	0.0	3	10	16	5	s.	H. C. Braden.				
Fairland.	Burnet.	1,000	1	73.0		94	27	51	23	34	2,41		0.96	0.0	9	14	12	5	s.	R. L. Bush.				
Falfurrias.	Starr.	3	27	77.8		95	11 <sup>c</sup>	56	25	35	4,35		4.00	0.0	4	21	9	1	s.	W. A. Gardner.				
Flatonia.	Fayette.	465	2	73.6		95	31	55	24	38	3,44		0.70	0.0	9	9	9	13	s.	Fred W. Laux.				
Flint.	Smith.	483		71.0		91	30	47	24	39	3,89		1.73	0.0	6	14	9	8	s.	F. C. C. Carter.				
Fort Clark.	Kinney.	1,050	23	75.5 <sup>a</sup>	- 1.9	95 <sup>a</sup>	10 <sup>c</sup>	52	23	38	1,30	- 2.35	0.70	0.0	2	10	14	7	s.	Post Hospital.				
Fort McIntosh.	Webb.	460	24	83.6	+ 2.8	103	15	68	24	31	1,18	- 1.13	0.40	0.0	5	15	3	13	s.	Do				
Fort Stockton.	Pecos.	3,050	13	74.6	+ 2.1	102	11	48	41	49	4,52	- 0.98	0.25	0.0	3	8	20	3	s.	H. H. Butz.				
Tarrant.	Tarrant.	670	25	72.6	- 0.6	90	10	48	14	31	5,76	+ 1.61	2,65	0.0	10	14	9	8	s.	U. S. Weather Bureau.				
Gainesville.	Gainesville.	1,742	21	71.5	- 0.6	90	31	53	18 <sup>c</sup>	36	12	- 1.38	0.91	0	5	8	16	7	s.	Arthur Striegler.				
Galveston.	Galveston.	69	40	74.0	- 1.4	83	31	61	23	37	5,10	+ 1.87	1.97	0.0	9	14	15	2	se.	J. L. Hickson.				
Gatesville.	Corryell.	795	6	71.4		89	11 <sup>c</sup>	52	7	30	4,50		1.90	0.0	5	13	18	0	s.	U. S. Weather Bureau.				
Georgetown.	Williamson.	750	15	73.1	- 0.8	94	9	53	87	32	3,69	- 0.93	1.37	0.0	9	12	15	4	s.	John Ryan.				
Gonzales.	Gonzales.	299	5								4,68		1,07	0.0	7	11	7	13	s.	Prof. R. F. Young.				
Graham.	Young.	1,040	11	72.4	- 0.6	100	9	44	3	43	4,30	- 0.31	0.83	0.0	7	14	6	11	s.	J. M. Johnson.				
Grand Saline.	Van Zandt.	354	6								2,50		1.27	0.0	4	17	12	5	s.	C. W. Johnson.				
Grapevine.	Tarrant.	670	25	72.6	+ 0.2	95	10 <sup>c</sup>	58	24	32	5,79		0.97	0.0	7	11	3	17	s.	F. E. Whittemore.				
Greenville.	Hunt.	550	10	70.4	- 0.8	95	29	49	8	38	2,40	- 3.47	1.15	0.0	7	9	0	22	s.	W. J. Crowley.				
Halletteville.	Lavaca.	236	19	74.2	- 2.6	92	31	53	25	31	5,49	+ 1.65	1.53	0.0	9	12	9	10	s.	J. P. Regan.				
Harper.	Haskell.	401	22	72.3	- 2.3	90	16 <sup>c</sup>	52	25 <sup>c</sup>	33	4,35	- 0.43	1.15	0.0	7	15	0	16	s.	Dr. J. E. Lay.				
Huntsville.	Jewett.	496	6	72.6		97	11	51	77	45	4,70	- 4.30	1.50	0.0	7	12	7	2	s.	Christian Frits.				
Junction.	Kimble.	1,045	7	71.7		95	45	49	24	33	4,19	- 3.19	1.15	0.0	3	24	0	7	s.	P. D. Sanders.				
Kaufman.	Kaufman.	448	11																					

TABLE 1.—*Climatological data for May, 1910. District No. 8—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Number of rainy days of 0.1 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.							
Texas—Cont'd.																					
Marble Falls.	Burnet.	771	2								2.81		1.00	0.0	9	15	4	12	sw.	Wm. Harrison.	
Marfa.	Presidio.		2								1.00		0.50	0.0	3					R. K. Colquitt.	
Marshall.	Harrison.	375	1	71.0		91	30	46	9	40	4.55		1.73	0.0	8	0	25	6	s.	Lee Scott.	
Mexia.	Limestone.	537	6	70.2		91	9	50	8	37	5.61		1.68	0.0	11	7	15	9	w.	Miss Josephine Newman.	
Midland.	Midland.		3			100	29†				0.60		0.50	0.0	2	18	11	2	sw.	H. J. Elder.	
Mont Belvieu.	Chambers.	65									5.22		1.56	0.0	8	14	12	5	s.	A. R. Shearor.	
Mt. Blanco.	Crosby.	2,750	22	65.2		93	1	40	3	40	2.38	+ 0.28	0.98	0.0	6	15	3	13	n.	H. C. Smith.	
Nacogdoches.	Nacogdoches.	271	11	70.4	- 2.4	88	30	50	8†	36	8.52	+ 3.28	1.93	0.0	7	10	9	12	s.	Miss Mary Hofmann.	
New Braunfels.	Comal.	720	21	72.8	- 1.8	93	31	53	24	26	2.71	- 0.51	1.00	0.0	7	8	15	8	ne.	J. Giesecke.	
Palestine.	Anderson.	510	28	70.7	- 1.8	88	30	52	14	30	5.75	+ 0.88	2.78	0.0	10	11	13	7	s.	U. S. Weather Bureau.	
Panter.	Hood.	1,000	20								4.30	+ 0.50	1.95	0.0	7					E. H. Snider.	
Pearall.	Frio.	629									2.86		1.50	0.0	4					H. E. Walker.	
Pierce.	Wharton.	102	4	69.6		87	11	52	9	27	9.77		6.39	0.0	9	8	13	10		R. B. Pointer.	
Plainview.	Hale.	3,370	2	64.5*		98	29	30*	3	44*	1.93		0.76	0.0	7	18*	5*	7	se.	J. F. Sander.	
Port Lavaca.	Calhoun.	20	9	77.1		97	31	50	24	32	7.78		4.46	0.0	5	13	17	1	s.	J. H. Bickford.	
Ricardo.	Nueces.	57	1	77.8		95	1	57	25	30	1.37		0.87	0.0	4	14	16	1	se.	Lindsay Waters.	
Riverside.	Walker.	169	6								4.01		1.20	0.0	6	15	3	13	s.	Mrs. C. W. Higdon.	
Robert Lee.	Coke.	1,850	2	72.3		99	11	47	3	39	1.00		0.43	0.0	5	17	5	9	se.	H. D. Pearce.	
Rockland.	Tyler.	136	6								4.88		2.00	0.0	4	12	1	18	s.	D. W. Bellamy.	
Rossville.	Atascosa.	558	3	75.7		98	17	55	24	38	2.23		1.12	0.0	6	5	22	4	se.	W. F. M. Ross.	
Runge.	Karnes.	308	15								10.70	+ 7.02	5.85	0.0	6					Reiffert & Froese.	
Sabinal.	Uvalde.	964	6	76.4		94	9†	54	23†	35	3.63		2.93	0.0	6	7	6	18	e.	Jas. Johnson.	
San Angelo.	Tom Green.	1,847	2	73.6		98	11	49	24	39	0.82		0.68	0.0	3	12	14	1		Sam Crowther.	
San Antonio.	Bexar.	701	25	74.7	- 0.1	96	31	55	24	29	1.56	- 1.40	0.81	0.0	7	6	18	7	se.	U. S. Weather Bureau.	
San Augustine.	San Augustine.	380	1								8.82		2.58	0.0	9	14	8	9		F. A. Wilson.	
San Juanito.	Hidalgo.	1		82.0		100	9	82	5†	35	8.10		7.08	0.0	2	7	7	17	se.	J. B. McAllen.	
San Marcos.	Hays.	588	17	72.6	- 1.7	80	2	54	24	30	2.80	- 1.30	0.80	0.0	6	11	0	20	s.	Miss L. C. Ford.	
San Saba.	San Saba.	1,712	6	72.4		93	9†	47	24	37	4.85		2.43	0.0	5	17	11	3	s.	Jas. Burns.	
Santa Gertrudes.	Nueces.	8									3.32		0.0	11	16	7	8	n.	J. B. Wright jr.		
Seymour.	Baylor.	1,180	4	69.2		98	10	44	3	39	6.75									F. M. Deaver.	
Somerville.	Burleson.	251	1																	W. A. Dolan.	
Sonora.	Sutton.	2,200	7																	Mike Murphy.	
Sugarland.	Fort Bend.	79	12	71.8*	- 3.8	93*	9	41	12	48*	5.25	+ 0.74	1.95	0.0	5	19	7	5	s.	O. M. Bakke.	
Taylor.	Williamson.	583	9	72.6	- 1.7	92	31	55	23	29	2.74	- 1.27	1.16	0.0	8	15	10	6	s.	U. S. Weather Bureau.	
Temple.	Bell.	630	16	73.0	- 0.1	95	9†	53	23	40	8.17	+ 4.11	3.70	0.0	9	10	13	8	s.	H. D. Patterson.	
Tilden.	McMullen.		4																	Wm. Kuykendall.	
Tivoli.	Refugio.										5.63		2.00	0.0	5	7	16	8		W. H. Cisler.	
Uvalde.	Uvalde.	937	2	77.4		98	31	53	24	37	2.04		1.54	0.0	5	10	21	0	e.	F. M. Getzendaner.	
Valley Junction.	Robertson.	289	5								4.80		1.30	0.0	7	16	5	10	s.	T. M. Williams.	
Victoria.	Victoria.	187	12	75.6	- 2.4	92	7†	58	24†	30	6.68	+ 3.00	1.70	0.0	7	16	2	13	s.	C. C. Zirjacks.	
Waco.	McLennan.	424	21	72.6	- 2.7	94	2	56	5†	33	8.18	+ 3.12	2.00	0.0	7	16	1	14	s.	E. H. Hall.	
Waxahachie.	Ellis.	550	14	70.2	- 3.2	94	10†	48	7†	45	7.75	+ 2.40	2.16	0.0	9	14	6	11	s.	C. D. Longserre.	
Weatherford.	Parker.	884	21	70.6	- 1.1	96	11	45	14†	37	5.78	+ 1.90	1.88	0.0	6	17	3	11	n.	Miss J. Stickfort.	
Wharton.	Wharton.	105	8	77.0		97	12†	55	25†	32	8.86		4.51	0.0	6	14	4	13	s.	Mrs. F. M. Hughs.	
Wills Point.	Van Zandt.	524	5	69.8		91	11	49	8	34	3.79		1.40	0.0	5	13	4	14	s.	W. W. Gibbard.	
Zapata.	Zapata.	300	1	83.7		107	22†	63	18†	34	1.07		0.86	0.0	2	21	7	3	se.	F. H. Earnest.	

\*, †, \*, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

\* Precipitation included in that of the next measurement.

† Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Separate dates of falls not recorded.

Data are from standard instruments not supplied by the U. S. Weather Bureau.

Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

Estimated by observer.

Precipitation for the 24 hours ending on the morning when it is measured.

† Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for May, 1910. District No. 8, Texas and Rio Grande Valley.*

TABLE 2.—*Daily precipitation for May, 1910. District No. 8—Continued.*

## MONTHLY WEATHER REVIEW.

MAY, 1910

TABLE 2.—*Daily precipitation for May, 1910. District No. 8—Continued.*

TABLE 3.—Maximum and minimum temperatures at selected stations, May, 1910. District No. 8, Texas and Rio Grande Valley.

## Texas.

Date.	Del Rio.		El Paso.		Fort McIntosh.		Fort Stockton.		Fort Worth.		Galveston.		Hallettsville.		Houston.		Lufkin.		Palestine.		Plainview.		San Antonio.		Seymour.		Taylor.		
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1...	87	66	86	61	95	70	99	55	87	67	75	69	82	65	82	65	84	63	83	65	91	53	86	66	96	66	84	66	
2...	90	67	85	60	101	75	92	52	88	61	76	70	82	71	84	68	87	63	86	67	87	47	91	67	80	65	90	67	
3...	85	65	71	53	98	70	83	49	66	54	73	71	82	67	85	65	84	65	86	62	89	39	84	66	66	44	81	62	
4...	86	68	85	53	93	70	80	43	73	56	76	67	83	67	84	64	84	63	89	61	94	43	84	64	81	50	84	59	
5...	84	66	86	60	93	70	77	60	80	52	76	69	79	64	85	64	83	61	80	58	72	53	84	64	75	57	81	61	
6...	89	66	85	58	96	70	93	55	86	66	77	70	81	65	84	64	83	63	80	65	78	53	87	67	87	59	85	67	
7...	89	65	86	58	99	70	88	49	75	54	79	72	81	67	87	69	83	63	75	45	82	66	70	50	89	64	74	64	
8...	88	67	88	62	93	70	90	63	79	51	76	68	80	63	93	61	77	53	90	50	84	60	84	55	87	47	81	55	
9...	93	66	91	63	98	70	97	58	90	59	77	70	84	61	87	60	88	53	91	52	89	65	94	57	88	59	86	64	
10...	93	65	92	63	96	70	101	60	93	66	78	72	83	67	86	62	89	59	86	63	93	55	88	68	98	59	88	64	
11...	95	66	91	65	98	70	102	68	92	65	78	72	81	63	87	63	89	60	84	65	83	58	90	69	94	71	90	67	
12...	94	68	84	62	100	72	89	59	78	61	81	73	85	67	88	66	86	66	82	64	89	59	83	63	79	57	84	67	
13...	89	71	92	64	95	72	93	65	74	54	78	72	82	69	84	65	88	55	70	55	60	46	87	67	63	51	76	57	
14...	89	70	89	64	96	72	97	59	61	48	77	70	76	65	82	77	63	68	54	61	52	56	46	85	65	66	50	79	56
15...	91	69	85	63	103	72	89	61	76	56	79	72	87	70	87	69	88	54	79	57	79	48	89	69	77	58	87	63	
16...	90	74	87	67	99	75	100	51	85	64	80	74	87	75	85	82	72	88	83	86	72	50	88	85	72	60	92	73	
17...	82	66	75	57	97	75	90	57	68	54	80	75	79	64	82	72	82	70	83	69	62	42	79	62	72	52	84	56	
18...	69	57	82	56	84	75	79	53	71	57	79	72	84	62	82	69	77	63	74	64	48	75	59	65	56	75	50	82	
19...	88	63	85	58	97	75	92	60	81	59	78	74	86	69	79	65	80	65	76	64	82	51	81	61	80	57	78	62	
20...	95	65	82	62	102	72	92	56	88	63	80	84	87	69	85	64	89	62	82	64	84	53	80	63	90	64	80	65	
21...	89	64	80	57	95	70	91	60	89	60	81	64	86	64	86	61	86	63	85	62	81	48	82	60	89	61	86	60	
22...	86	65	76	56	96	70	86	56	78	59	76	63	82	62	81	61	84	62	80	59	70	44	83	62	71	53	81	61	
23...	86	57	79	50	91	70	83	48	60	56	74	61	82	61	75	62	83	61	70	58	74	44	79	57	70	57	72	55	
24...	93	49	88	56	94	68	93	51	81	55	78	62	81	58	80	59	80	50	76	56	83	49	84	55	81	51	81	56	
25...	97	59	90	62	98	70	100	63	82	58	83	68	84	53	87	61	83	53	82	58	86	50	85	59	88	58	83	60	
26...	96	64	89	67	98	70	95	65	86	64	79	73	86	60	83	64	86	59	83	64	87	51	87	60	94	65	85	58	
27...	94	66	93	66	94	70	92	64	84	64	78	72	81	64	83	66	87	61	83	63	86	52	85	65	91	59	82	64	
28...	88	70	98	66	93	70	91	63	84	68	79	74	85	64	83	66	88	62	84	64	86	53	86	68	83	61	84	65	
29...	93	67	94	72	92	70	90	62	88	66	77	70	81	68	79	67	90	65	86	65	98	54	81	67	70	57	84	64	
30...	89	68	93	66	96	70	93	58	90	65	80	74	89	69	82	68	91	65	88	69	92	51	87	68	83	61	86	66	
31...	97	64	91	68	99	72	95	60	90	70	83	68	92	70	90	69	90	67	86	66	97	56	96	68	87	66	92	67	
Mns	89.2	64.9	86.4	61.1	96.1	71.1	81.5	57.7	80.5	60.1	78.2	69.8	83.1	65.3	83.5	64.8	85.1	60.8	79.9	61.5	79.5*	40.5*	85.0	64.4	80.8	57.6	\$2.9	62.3	